WHAT IS CLAIMED IS:

1. A non-human mammal having an SP-D (-/-) null phenotype.

2. The non-human mammal of claim 1 wherein said non-human mammal is a mouse.

3. The non-human mammalian model of claim 2 wherein said mouse has a deletion of sequences from exon 2 of the SP-D gene including the intiating methionine and translation initiation sequences.

4. A method for the prevention and treatment of pulmonary disease comprising: introducing mammalian SP-D protein, or vectors expressing the mammalian SP-D protein into a human in an amount effective to reduce the symptoms of or prevent pulmonary disease.

5. The method of Claim 4 wherein the pulmonary disease is emphysema.

6. The method of Claim 4 wherein said SP-D protein is administered intra-tracheally.

7. The method of Claim 4 wherein said SP-D protein is expressed from an adenoviral vector.

8. The method of Claim 4 wherein said adenoviral vector is introduced via aerosolization.

9. The method of Claim 4 wherein said adenoviral vector is the adenoviral vector Ad-rSPD deposited under the Accession No.

10. A pharmaceutical composition effective in treating pulmonary disease in mammals comprising SP-D protein in admixture with a pharmaceutically acceptable excipient.

11. A biologically active agent for treating pulmonary disease in mammals comprising an agent that up-regulates expression of SP-D.

12. The biologically active agent of Claim 11 wherein said agent is IL-4.

13. A biologically active agent for treating pulmonary disease in mammals comprising a vector expressing SP-D.

14. The biologically active agent of Claim 13 wherein said vector is an adenovirus.

15. The biologically active agent of Claim 14 wherein said adenovirus vector is the Ad-rSPD of the present invention.

16. A biologically active agent for treating pulmonary disease in mammals comprising an agent that interacts with the SP-D protein.

17. A method for diagnosing susceptibility to pulmonary disease comprising the steps of:

identifying a mutation in the SP-D gene which results in deficient SP-D

identifying said mutation in a test subject.

18. The method of diagnosing susceptibility to pulmonary disease of Claim 17 wherein said mutation is identified by PCR.

19. The method of diagnosing susceptibility to pulmonary disease of Claim 17 wherein said mutation is identified by hybridization.

20. The method of diagnosing susceptibility to pulmonary disease of Claim 17 wherein said mutation is identified by ELISA.

21. A method of identifying pharmaceutical agents useful in treatment of pulmonary disease comprising the steps of:

allowing the mammal of claim 1 to develop a pulmonary disease

administering a pharmaceutical agent to said mammal, and

identifying said agent as effective if said pulmonary disease improves.

22. A method of purifying SP-D antibodies comprising:

reaction of SP-D antibodies with a solid phase lung homogenate from any mouse with does not produce SP-D protein.

23. The method of Claim 22 wherein said mouse is an SP-D null mouse.

24. A method of purifying SP-D antibodies comprising:

reaction of SP-D antibodies with a solid phase lung homogenate from the SP-D null mouse of claim 1.

Sub 24 25. A method for the prevention and treatment of pulmonary disease comprising:

introducing mammalian SP-D protein, or vectors expressing the mammalian SP-D protein into a human in an amount effective to reduce the symptoms of or prevent pulmonary disease, wherein the pulmonary disease is selected from the group consisting of: reactive oxygen-mediated disease, chemically induced lung injury, injury due to oxygen radicals, injury due to ozone, injury due to chemotherapeutic agents, inflammatory and infectious diseases, reperfusion injury, drowning, transplantation, and rejection.

26. A method for the prevention and treatment of viral disease comprising:

introducing mammalian SP-D protein, or vectors expressing the mammalian SP-D protein into a human in an amount effective to reduce the number of viruses or symptoms of the viral disease.

27. The method of Claim 26 wherein the viral disease is caused by a virus selected from the group consisting of: Adenovirus, RSV, and Influenza virus.

Sub a5 28. A method of inhibition of metalloproteinase activity and reactive oxygen species in the lungs, comprising, administering SP-D to the lungs in an amount effective to inhibit metalloproteinase activity and reactive oxygen species.

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